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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors
Date of Testing	:	28.03.18
Type of Mix	:	BC
Sample I/D	:	BC1

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	928	942
2. Weight of Mixture after extraction, g	876	889
3. Weight of Bitumen	52	53
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	3.80	4.00
6. Weight of fines, g	1.80	1.85
7. Weight of Bitumen & fines	53.80	54.85
8. Bitumen content in %	5.80	5.82
9. Average Bitumen content in %	**5.81**	
10. Minimum Bitumen content in %	**5.80**	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18,Grading-2)

Sample Location:	At site	Date of Sampling:	28.03.18
		Date of testing:	28.03.18
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	876.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	100	100.0	11.42	88.58	79 - 100
9.50	106	206.0	23.52	76.48	71 - 95
4.75	140	346.0	39.50	60.50	53 - 71
2.360	116	462.0	52.74	47.26	42 - 58
1.180	80	542.0	61.87	38.13	34 - 48
0.600	76	618.0	70.55	29.45	26 - 38
0.300	70	688.0	78.54	21.46	18 - 28
0.150	58	746.0	85.16	14.84	12 - 20
0.075	82	828.0	94.52	5.48	4 - 10
Pan	48.0				
Total	876.0				

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors
Date of Testing	:	28.03.18
Type of Mix	:	Tack coat
Sample I/D	:	1

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.912	0.872
Final weight of plate after application of tack Coat (c)	Kg	0.935	0.895
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.250
Average	Kg/sq.m	0.253	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

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Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors
Date of Testing	:	28.03.18
Type of Mix	:	Tack Coat
Sample I/D	:	2

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.778	0.782
Final weight of plate after application of tack Coat (c)	Kg	0.801	0.805
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.250
Average	Kg/sq.m	0.253	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

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Vidyaranyapura Sub Division
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Name of Work	:	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	M/S Ram and Company, Engineers & Contractors
Date of Testing	:	28.03.18
Type of Mix	:	Tack Coat
Sample I/D	:	3

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	**Unit**	**Test No**	
		1	**2**
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.756	0.780
Final weight of plate after application of tack Coat (c)	Kg	0.779	0.803
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.250
Average	Kg/sq.m	0.253	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

Consultant's Representative

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Test Report on Cement

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Sample ID	Cement
Date of Sample Tested	02.04.18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	36 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	358 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	3 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	27.00%	

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Test Report on Cement

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Sample ID	Cement
Date of Sample Tested	02.04.18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	39 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	336 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	3 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	02.04.18
Period of Soaking	24 hours	Date of Testing	02.04.18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	598	628	622	
B	Weight of oven - dry sample gm.	588	618	612	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1652	1671	1667	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.661	2.664	2.661	2.662
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.701	1.618	1.634	1.651

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)/ M Sand		Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site		Date of Sampling	02.04.18	
			Date of Testing	02.04.18	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	182	182	6.07	93.93	90 - 100
2.36 mm	470	652	21.73	78.27	75 - 100
1.18 mm	620	1272	42.40	57.60	55 - 90
0.600 mm	442	1714	57.13	42.87	35 -59
0.300 mm	610	2324	77.47	22.53	8-30
0.150 mm	446	2770	92.33	7.67	0 - 10
Pan	230	3000			-

Remarks : Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	02.04.18
Period of Soaking	24 hours	Date of Testing	02.04.18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	588	622	600	
B	Weight of oven - dry sample gm.	578	612	590	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1645	1667	1654	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.651	2.661	2.670	**2.661**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.730	1.634	1.695	**1.686**

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	02.04.18
				Date of Testing	02.04.18

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	100	100	3.33	96.67	95-100
20.00mm	1462	1562	52.07	47.93	30-70
10.00mm	822	2384	79.47	20.53	10-35
4.75mm	564	2948	98.27	1.73	0-5
Pan	52	3000	100.00	0.00	

Remarks : Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	02.04.18
				Date of Testing	02.04.18

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	98	98	3.27	96.73	95-100
20.00mm	1568	1666	55.53	44.47	30-70
10.00mm	782	2448	81.60	18.40	10-35
4.75mm	452	2900	96.67	3.33	0-5
Pan	100	3000	100.00	0.00	

Remarks : Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)/ M Sand		Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site		Date of Sampling	02.04.18	
			Date of Testing	02.04.18	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	162	162	5.40	94.60	90 - 100
2.36 mm	422	584	19.47	80.53	75 - 100
1.18 mm	632	1216	40.53	59.47	55 - 90
0.600 mm	462	1678	55.93	44.07	35 -59
0.300 mm	622	2300	76.67	23.33	8-30
0.150 mm	462	2762	92.07	7.93	0 - 10
Pan	238	3000			-

Remarks : Satisfactory / Not Satisfactory

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BBMP, Bangalore - 97

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors
Total Weight in gm:	5000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	04.04.18
				Date of Testing	04.04.18

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	115	115	3.83	96.17	95-100
20.00mm	1562	1677	55.90	44.10	30-70
10.00mm	962	2639	87.97	12.03	10-35
4.75mm	242	2881	96.03	3.97	0-5
Pan	2119	5000	166.67	-66.67	

Remarks : Satisfactory / Not Satisfactory

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BBMP, Bangalore - 97

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	04.04.18
Period of Soaking	24 hours	Date of Testing	04.04.18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	632	638	642	
B	Weight of oven - dry sample gm.	622	628	632	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1674	1676	1679	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.670	2.650	2.655	**2.658**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.608	1.592	1.582	**1.594**

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size			Proposed Use	PCC
Sample Location	At Site			Date of Sampling	04.04.18
				Date of Testing	04.04.18
IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	100	100	3.33	96.67	95-100
20.00mm	1652	1752	58.40	41.60	30-70
10.00mm	782	2534	84.47	15.53	10-35
4.75mm	432	2966	98.87	1.13	0-5
Pan	34	3000	100.00	0.00	
Remarks :	Satisfactory / Not Satisfactory				

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AE. 11

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Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors
Location:	CC Road
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	06.04.18	16.04.18	7 days	8.172	22500	301	13.38	13.60
2	06.04.18	16.04.18	7 days	8.198	22500	306	13.60	
3	06.04.18	16.04.18	7 days	8.178	22500	311	13.82	

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	06.04.18
Period of Soaking	24 hours	Date of Testing	06.04.18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	600	632	610	
B	Weight of oven - dry sample gm.	590	620	600	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1653	1674	1660	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.658	2.661	2.667	2.662
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.695	1.935	1.667	1.766

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)/ M Sand		Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site		Date of Sampling	06.04.18	
			Date of Testing	06.04.18	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	162	162	5.40	94.60	90 - 100
2.36 mm	468	630	21.00	79.00	75 - 100
1.18 mm	612	1242	41.40	58.60	55 - 90
0.600 mm	452	1694	56.47	43.53	35 -59
0.300 mm	608	2302	76.73	23.27	8-30
0.150 mm	446	2748	91.60	8.40	0 - 10
Pan	252	3000			-

Remarks : Satisfactory / Not Satisfactory

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

Consultant's Representative

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION
FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	06.04.18
Period of Soaking	24 hours	Date of Testing	06.04.18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	588	600	606	
B	Weight of oven - dry sample gm.	580	590	598	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1645	1653	1656	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.661	2.658	2.658	2.659
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.379	1.695	1.338	1.471

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)/ M Sand		Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site		Date of Sampling	06.04.18	
			Date of Testing	06.04.18	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	168	168	5.60	94.40	90 - 100
2.36 mm	513	681	22.70	77.30	75 - 100
1.18 mm	612	1293	43.10	56.90	55 - 90
0.600 mm	432	1725	57.50	42.50	35 -59
0.300 mm	609	2334	77.80	22.20	8-30
0.150 mm	412	2746	91.53	8.47	0 - 10
Pan	254	3000			-
Remarks :	Satisfactory / Not Satisfactory				

Assistant Executive Engineer
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Test report on Compressive strength of concrete cubes

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors
Location:	CC Road
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	06.04.18	16.04.18	7 days	8.170	22500	308	13.69	13.73
2	06.04.18	16.04.18	7 days	8.212	22500	309	13.73	
3	06.04.18	16.04.18	7 days	8.162	22500	310	13.78	

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)/ M Sand		Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site		Date of Sampling	04.04.18	
			Date of Testing	04.04.18	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	172	172	5.73	94.27	90 - 100
2.36 mm	522	694	23.13	76.87	75 - 100
1.18 mm	618	1312	43.73	56.27	55 - 90
0.600 mm	438	1750	58.33	41.67	35 -59
0.300 mm	610	2360	78.67	21.33	8-30
0.150 mm	422	2782	92.73	7.27	0 - 10
Pan	218	3000			-

Remarks : Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand)/ M Sand	Proposed Use	Road concrete/PCC
Location/Source	At Plant/ Site	Date of Sampling	04.04.18
Period of Soaking	24 hours	Date of Testing	04.04.18

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	Average
A	Weight of sturated surface dry sample gm.	632	652	646	
B	Weight of oven - dry sample gm.	622	642	636	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1673	1686	1681	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.658	2.664	2.650	2.657
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.608	1.558	1.572	1.579

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Assistant Executive Engineer
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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Ram and Company, Engineers & Contractors

SIEVE ANALYSIS

Total Weight:	3000 gms				
Type of Material	Fine aggregate (River Sand)/ M Sand		Proposed Use	Road concrete/PCC	
Sample Location	At Plant/ Site		Date of Sampling	04.04.18	
			Date of Testing	04.04.18	
IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	212	212	7.07	92.93	90 - 100
2.36 mm	422	634	21.13	78.87	75 - 100
1.18 mm	542	1176	39.20	60.80	55 - 90
0.600 mm	440	1616	53.87	46.13	35 -59
0.300 mm	612	2228	74.27	25.73	8-30
0.150 mm	482	2710	90.33	9.67	0 - 10
Pan	290	3000			-

Remarks : Satisfactory / Not Satisfactory

Consultant's Representative

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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Test Report on Cement

Project	COMPREHENSIVE DEVELOPMENT FOR ROADS AND DRAINS IN WARD NO. 9, 10 AND 11 UNDER CMC AND TMC GRANTS, VIDYARANYAPURA SUB-DIVISION, YELAHANKA ZONE, BYATARAYANAPURA DIVISION.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	M/S Ram and Company, Engineers & Contractors.
Sample ID	Cement
Date of Sample Tested	04.04.18
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	39 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	380 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	

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